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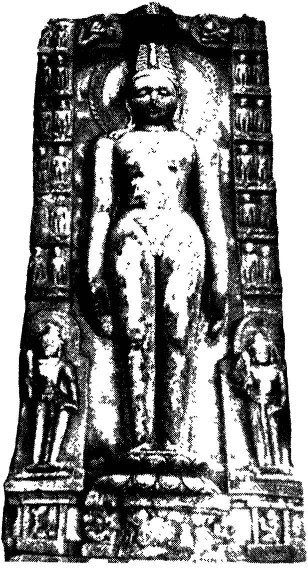
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Plate



Adinath, Dharapat, West Bengal

Notion of Obliquity of Ecliptic Implied in the Concept of Mount Meru in Jambudvipa Prajnapti

S. S LISHK AND S. D. SHARMA

Here a simple probe is rendered into the concept of mount Meru in *Jambūdvīpa Prajñapti*, a Jaina canonical work of post-*Vedāṅga* pre-*Siddhāntic* period (also called dark period) in the history of ancient Indian astronomy. It is revealed that dimensions of Meru fit certain astronomical constants, e.g. obliquity of ecliptic. Thus Meru represents a tentative astronomical model of notion of obliquity of ecliptic. This model plays an important role in unearthing the meaningful concepts of Jaina notions like those of flat earth and *samatala bhūmi* ('earth having plane surface' denoting on earth a circular area with centre at the projection of pole of ecliptic) etc.

(a) *A Historical View of Location of the Mount Meru*:

There are sixteen name-variants of Meru viz.[1]

1.	Mandara	2.	Giriraja	3.	Meru
4.	Priyadarsana	5.	Ratnoccaya	6	Lokanabhi
7	Manorama	8	Sudarsana	9.	Disadi
10.	Uttama	11.	Asta (Accha)	12.	Suryavarta
13.	Svayamprabha	14.	Vatanka	15.	Lokamadhya
				16.	Suryavarana.

As regards astronomical significance of these names, only a few of them are meaningful, e.g. Lokanabhi (navel of the world or a division of universe), Disadi (meaning like something from which directions are indicated), and Lokamadhya (centre of the world). Other names are, more or less, literary types, e.g. Priyadarsana (beautiful), Uttama (best), Giriraja (king of mountains), etc.

[1] Cf Shastri, Balchandra (1962) *Lokavibhaga* (Hindi tr), vv. 1 327-329, p. 41.

This paper was presented at the 7th session of Jaina Vidya Parishad, Jaina Vishva Bharati, Ladnun (7-9 Oct 1977).

There are many different theories about location of the mount Meru[2]. Parasara opines that Meru stands in the heart of Jambudvipa (isle of *Jambū* tree). A second theory is that Meru consists of highlands of Tartary immediately north of the Himalayas, meaning no doubt the plateaux of Tibet and Pamira[3]. Bhaskaracarya considers Meru as the abode of the gods Brahma, Visnu and Siva. This is why the god Siva is also called as Merudhaman and Kailasanatha, that is, 'the god whose abode is Meru' and 'Lord of the mountain called Kailasa' respectively[4] Tilak[5] is of opinion that Meru is the terrestrial north pole of the Hindu astronomers In support of his view he quotes a line from *Sūrya Siddhānta*[6] (xii. 67) which means "At meru the gods behold Sun, after but a single rising, during the half of his revolution beginning with Aries". Brahmagupta[7] also says that the day of angels who inhabit Meru lasts six months, and their night also six months Bhaskaracarya[8] also holds a similar view about the day of the inhabitants of Meru.

Regarding the Hindu concept of Meru, Alberuni[9] points out that it is similar to that of Zoroastrians who places at centre of the world the mountain of Girnagar. the Taera of Avesta Some others also say that notion of the mount Meru is possibly ascribed to a foriegn origin, (ed. J H Woods, p 254)[10] The name variants Meru, Smeru and Sumeru also seem to indicate a foriegn origin[11] The geographical scheme generally accompanying the description of Meru may be connected with the Avestan scheme of seven districts and mount Meru recalls to us the Olympus of Greeks[12]

However, despite the diversity of opinions about the origination of the concept of mount Meru, it seems plausible that the concept of Meru

[2] Cf. Needham, J and Wang, L (1959) *Science and Civilization in China*, Vol 3 pp 531(d), 563, 568, 589

[3] Gobkere, R K (1933) *Through Wonderlands of the Universe*, p 377

[4] *Ibid*

[5] Tilak, B G (1971) *The Arctic Home in the Vedas*, second reprint, pp 55-60

[6] Cf Misra, B P (1963 B S) *Surya Siddhanta* (Sanskrit commentary), xii 67 p. 214

[7] Kaye, G R (1924) *Memoires of the Archaeological Survey of India*, No 18. *Hindu Astronomy*, p 38

[8] Cf. Dvivedi, G P. (1911) *Siddhanta Siromani, Goladhyaya*, vii 9 (edited with Hindi commentary)

[9] Sachau, E C (1964) *Alberuni's India* (edited with English tr), ch. xxiii, pp. 243-250

[10] See f n. No 7

[11] *Journal of the Royal Asiatic Society* (1917), p 365

[12] See f n No 7

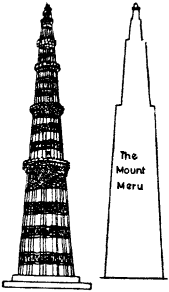


Fig No 1

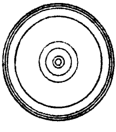


Fig. No 2(b)

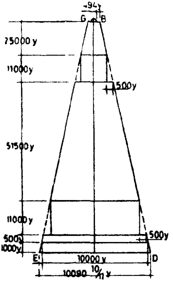


Fig. No. 2(a)

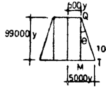


Fig. No 2(c)

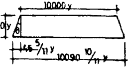


Fig. No. 2(d)

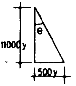


Fig. No. 2(e)

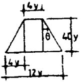
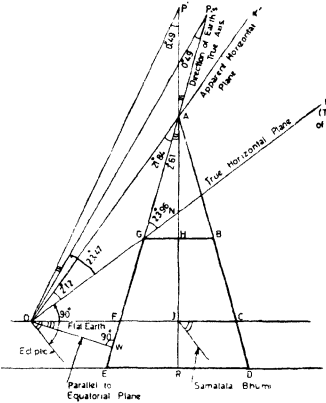


Fig. No. 2(f)



HJ = 99000y*, GB = 1000y, AH = 11000y,

JR = 1000 y, FC = 10000y, NH = 1000y,

ED = 10090 $\frac{10}{11}$ y,

* y = Ātma yojana (ADS Units)

Fig No 3

rendered an importent role in Jaina cosmography and Jaina astronomical notions were strictly interwoven with it. Jainas had perhaps for some mysterious calculations a strange theory of two Suns, two Moons, two sets of Naksatras (asterisms) and two sets of Stars which were assumed to move in circles round the mount Meru placed at the centre of Jambudvipa, the central island of flat earth made up of concentric rings of land masses alternatively surrounded by ocean rings[13]. Evidently such a Meru seems to possess some polar characteristics

Besides, it is worth mentioning here that Kedar Nath Prabhakar[14] is of opinion that Kutubminar (Arabic synonym of the mount Meru) in Delhi had been constructed on the pattern of Meru in such a way that 1000 *yojanas* were equivalent of one yard (see fig No. 1) It is to be noted that the dimensions of Kutubminar might have been chosen as such but still more investigations are to be made in this direction We will come to this point later

(b) *Dimensions of the Mount Meru* :

Generally there is unanimity among scholars in attributing to Meru a fabulous size and height[15] However, Aryabhatta[16] (*Āryabhattiyam* 4 11) has mentioned the diameter of Meru, as one *yojana*. ***Purāṇas***, however, make it 80,000 or 86,000 *yojanas* high etc[17] A descriptive record of dimensions of the mount Meru is found in *Jambūdvīpa Prajñapti*, 5th *Upāṅga* (sub-limb) of Jaina canon. *JP*, IV.113 states :

णवणउति जोयण सहस्साइ उद्ध उच्चत्तेण
एग जोयणसहस्स उव्वेहेण,
मूले दसजोअणसहस्साइ णवइ च जोअणइ दस य
एगारसभाए जोअणस्स विक्खभेण,
धरणिअले* दस जोअणसहस्साइ विक्खभेण,
तयणतर च ण मायाए मायाए परिहायमाणे-परिहायमाणे
उवरितले एगं जोअणसहस्स विक्खभेण ।

[13] Bose, D M., Sen, S. N and Subarayappa, B. V (1971) *A Concise History of Science in India*, p. 80

[14] Prabhakara, Kedar Nath (editor) (1974) *Varaha Mihira Memorial Volume* (in Hindi), pp 142-145

[15] See f n. No 3

[16] Cf *Aryabhattiyam*, *Gitika* 4, verse 11

[17] See f.n. No. 9.

*The word '*dharanitale*' termed as 'flat earth' also denotes a standard reference plane

i.e. "(Meru) is 99000 *yojanas* high, 1000 *yojanas* deep and has a diameter of $10090\frac{10}{11}$ *yojanas* at its base (inside the flat earth), 10000 *yojanas* at the base on flat earth and 1000 *yojanas* at the top"

According to *Tiloya Paṇṇatti*[18] (*gāthā* 4,1780 et. seq), Meru is made up of frustrum of cones The diameter at its lowest base is $10090\frac{10}{11}$ *yojanas* and it goes on decreasing uniformly upto 1000 *yojanas* at a height of 100000 *yojanas*. The decrease in diameter with regard to increase in the height above the lowest base of Meru is shown in figure No. 2(a) Figure No 2(b) represents the plan of Meru

It may easily be seen that the hypotenuse is always inclined at an angle θ to the vertical

Angle θ is given as

$$\tan\theta = \frac{MT}{QM} = \frac{4500}{99000} = \frac{500}{11000} \quad \text{(see fig No 2(c)}$$

$$\tan\theta = \frac{45\frac{5}{11}}{1000} = \frac{500}{11000} \quad \text{(see fig No 2(d)}$$

$$\tan\theta = \frac{500}{11000} \quad \text{(see fig. No. 2(e)}$$

Besides, at centre of the top of Meru, a *culikā* (apex or summit) having 12 *yojanas* diameter at its base, 4 *yojanas* diameter at its top and 40 *yojanas* height, is situated Hypotenuse of *cūlikā* makes an angle θ with the vertical Angle θ is given as

$$\tan\theta = \frac{4}{40} = \frac{1}{10} \quad \text{(see fig No 2(f)}$$

Evidently $\theta \neq \theta$

Thus construction of *culikā* violates consistency of other dimensions of the mount Meru. The secret of this mystery is yet to be unearthed. However, the approximate form of Meru can be represented as GEBD (see fig No 3)

[18] Jain L C (1958) *Tiloya Pannatti-ka Ganit* (prefixed with *Jambudiva Pannatti Samgaho* edited by A N Upadhye and Hira Lal Jain), pp. 62-64.

(c) *Astronomical Model of the Mount Meru* :

Now let us make a simple probe into the concept of Meru from an astronomical point of view.

In fig. No. 3, let OFJC be the plane of flat earth and FC denote the diameter of Meru on it. Let ED and GB denote the diameters of Meru at its lowest base depressed inside the flat earth and its top respectively RJH represents the axis of Meru Join E, F, G and D, C, B respectively and extend them till they meet at A on the extended axis of Meru

Now since we are given that

GB = Diameter of Meru at its top = 1000 y,
where y = *ātma yojana* (*Anuyogadvāra Sūtra* units),

FC = Diameter of Meru on flat earth = 10000 y,

ED = Diameter of Meru at its lowest base depressed inside the flat earth = $10090\frac{10}{11}$ y,

HJ = Height of Meru above the flat earth = 99000 y,

and JR = Depth of Meru inside the flat earth = 1000 y

Now in $\triangle$ AFC, $\because$ GB $\parallel$ FC,

$$\therefore \quad \frac{AJ}{AH} = \frac{FC}{GB}$$

$$\text{or} \quad \frac{AH+99000}{AH} = \frac{10000}{100} \qquad (\because \ AJ = AH+HJ)$$

$$\text{or} \quad AH = 11000\ y \qquad (1)$$

Similarly in $\triangle$AED, $\because$ GB $\parallel$ ED,

$$\therefore \quad \frac{AR}{AH} = \frac{ED}{GB}$$

$$\text{or} \quad \frac{111000}{11000} = \frac{ED}{1000} \qquad (\because \ AR = AH+HJ+JR = 11000+99000+1000 = 111000\ y)$$

$$\text{or} \quad ED = 10090\tfrac{10}{11}\ y$$

= same as given in *JP*, iv. 113.

This suggests that ED might have been theoretically generated through simple geometry as above, otherwise there seems to be no logic in taking this odd value ($10090\frac{10}{11}$ y) of ED. However it is portend ed against any hasty conclusions about the knowledge of Geometrical Proposition methods. It is desirable to make more investigations into

this field. But it is convincing that dimensions of Meru except those of its *cūlikā* form a consistent picture AFD represents the approximate cone of Meru. The traditional mount Meru GEDB is represented by the frustrum of cones.

Now let us assume

(i) that the observer is situated at O lying at the circumference of Jambudvipa whose radius[19] is 50000 y

(ii) that OGK represents the true horizontal plane of the observer* and it meets the direction of earth's axis at G as such that P lies at the true celestial north pole and OW represents a plane parallel to the equatorial plane.

(iii) that OAK' represents the apparent horizontal plane of the observer

(iv) that P' is chosen as such that its apparent altitude ∠P'OK' is equal to ∠PGK (the angle of inclination of the axis of the earth to the true horizontal plane OGK of the observer)

Now join P' with A, the point of intersection of the apparent horizontal plane with axis of earth Extend P'A till it meets perpendicularly the plane OFJC at J The plane OFJC is inclined to the equatorial plane at ∠FOW which is equal to ∠FAJ, for the angle between two planes is equal to the angle between their perpendiculars. The imaginary locus of revolution of P round P' is projected on flat earth as the locus of F revolving round J. This produces the cone AFC This cone is cut at G by a plane GHB parallel to flat earth The true horizontal plane OGK meets the axis of Meru at N

Now because earth is regarded as made up of concentric rings of land masses alternatively surrounded by ocean rings with the mount Meru placed at centre of the central island Jambudvipa[20] so OJ forms the radius of Jambudvipa

Radius of Jambudvipa,[21] OJ = 50000 y

Now in △NOJ, GH ∥ OJ,

$$\therefore \frac{NH}{NJ} = \frac{GH}{DJ}$$

[19] Gupta, R C (1975) 'Circumference of Jambudvipa in Jaina Cosmography', *IJHS*, Vol 10 No 1, pp 38-45

[20] See f n 13

[21] See f n 19.

* Apparent and true horizontal planes (see fig No 3) actually denote the respective tangential planes to the earth's sphere at the point of the observer's position on it They should not be confused with the modern astronomical sense of horizontal plane passing through the centre of the celestial sphere Be it mentioned here that our work is in progress to study the development of notion of spherical earth in Jaina astronomy

or $\frac{NH}{NH+99000} = \frac{500}{50000}$ ($\because$ GH = y2 GB, and NJ = NH+HJ)

$\therefore$ NH = 1000 y

Also we have

JR = 1000 y (given).

It suggests that height NH is preserved in terms of JR (depression of Meru inside the flat earth) and the diameter ED was theoretically generated as shown before

Now the various angles are computed as below :

$$\angle OAJ = \tan^{-1}\frac{OJ}{AJ} = \tan^{-1}\frac{50000}{110000} = 24^\circ.45$$

$$\angle FAJ = \tan^{-1}\frac{FJ}{AB} = \tan^{-1}\frac{5000}{110000} = 2^\circ.61$$

$$\angle AOJ = \tan^{-1}\frac{AJ}{OJ} = \tan^{-1}\frac{110000}{50000} = 65^\circ.55$$

$$\angle NOJ = \tan^{-1}\frac{NJ}{OJ} = \tan^{-1}\frac{100000}{50000} = 63^\circ.43$$

and

$\angle AOG = \angle AOJ - \angle NOJ = 2^\circ.12$

$\angle OAF = \angle OAJ - \angle FAJ = 21^\circ.84$

$\angle PGK = \angle OAJ + \angle AOG = 23^\circ.96$

By assumption iv, we have

$\angle P'OK' = 23^\circ.96$ and

$\angle P'AK' = \angle OAJ = 24^\circ.45$

$\therefore \angle P' = \angle PAK - \angle POK = 0^\circ.49$

Since P′ and P are very far off from 0 and they are close to each other, $\angle P$ is almost equal to $\angle P'$ for all practical purposes, i.e.

$\angle P = 0^\circ.49$

$\angle POK = \angle PGK - \angle P = 23^\circ.47$

$= 23^\circ.5$ approx.

i.e. The true altitude of the celestial north pole is 23°.5.

Since altitude of celestial north pole is equal to the terrestrial latitude of the observer,

$\therefore$ Latitude of the observer (in India) situated at 0, perhaps Ujjain (23°.90 N) or Patna (25°.37 N)

$= 23^\circ.5$ ... (2)

Evidently, this result better suits Ujjain, a renowned seat of ancient Indian culture.

Besides it may be noted that according to this exposition, Sun's maximum declination (obliquity of ecliptic) comes out to be 23°.96 (<PGK) whereas observer's terrestrial latitude with Sun overhead on Summer solstice day comes out to be 23°.47 (<POK) Since terrestrial latitude is less than astronomical latitude, and taking into account error due to actual shape of earth, etc., it may be contemplated that these results form a consistent picture within limits of error due to naked eye observation

On the other hand, we also have

∵ Flies at north extremity of earth's axis (projection of celestial north pole P on earth).

∴ Terrestrial co-latitude of the observer = OF

= OJ—FJ

= 45000 y

= 720 Y

whereas Y = *Yojana* (*Tiloya Paṇnatti* Units),[22]

and 1 y = $\frac{8}{500}$ Y

Let ϵ_{max} be the maximum declination of Sun, and therefore θ (= ϵ_{max}) is the latitude of the observer situated at O

$$90° - \epsilon_{max} = 720 \text{ Y} \quad (3)$$

We also know that Sun moves from innermost *mandala* diurnal circle on Summer solstice day) upto the outermost *mandala* (diurnal circle on Winter solstice day) over a distance of 510 *Yojanas* and vice versa.[23]

$$\therefore \; 2\,\epsilon_{max} = 510 \text{ Y} \quad (4)$$

Solving eq No. (3) and eq No (4) we have

ϵ_{max} = 23° 54

= 23 5 approx (5)

= Latitude of the observer situated at O

(see eq No 2)

[22] Lishk, S S and Sharma, S D (1975) 'The Evolution of Measures in Jaina Astronomy', *Tirthankar*, Vol. 1 Nos 7-12, pp. 83-92

See also Lishk, S S and Sharma, S D 'Length-units in Jaina Astronomy', *Sastyabdа-purti Souvenir of Prof L V S Mani* (Madras).

[23] Lishk, S S and Sharma, S D (1974) 'Post-*Vedanga* Pre-*Siddhantic* Indian Astronomy' Paper presented at Summer School on History of Science (*INSA*, New Delhi)

Therefore the result obtained in eq. No. (2) bears a consistency upon the validity of our assumptions.

So the following conclusions may be derived as :

(1) The flat earth OFJC is inclined to the equatorial plane
at angle $= \angle FOW$
$= \angle FAJ$ ($\because$ Angle between two planes is equal to angle between their normals).
$= 2^\circ.61$

(2) The circumference of Jambudvipa coincides with the parallel of maximum declination of the Sun. The axis of Meru is instanteneously taken as such that OJ = 50000 y whereas 0 lies anywhere on the parallel of maximum declination (23°.5) of the Sun. Earth's true axis passes along the hypotenuse of approximate cone of Meru, and not along the axis of Meru. So true radius of Jambudvipa is equal to apparent radius of Jambudvipa less redius of Meru's base on flat earth (see fig. No. 3).

(3) Meru represents an astronomical model implying a notion of altitude of the celestial north pole. The altitude of the celestial north pole for an observer situated at a latitude equal to maximum declination of Sun is equal to the obliquity of ecliptic. Thus the concept of Meru implies a notion of obliquity of ecliptic. This view is further supported by the fact that the famous Kutubminar in Delhi situated at 28° 31′ 28″ north latitude is inclined at an angle of 5° 1′ 28″ to the vertical. Thus the noon shadow length is zero on Summer solstice day.[24] Therefore it implies a notion of maximum declination of Sun. It is quite probable that the designer of Kutubaminar was in possession of the knowledge of the concept of Meru as implied in Jaina canonical literature and he attempted to perpetuate the idea by transforming the imaginary Meru into a realistic model of Kutubminar.

(d) *Applications of the Astronomical Model of Meru :*

(1) From eq. No. (4) and eq. No. (5), we have

$510\text{ Y} = 2\ \delta_{max} = 47^\circ$ ($\because$ $\delta_{max} = 23^\circ.5$)

$= 47 \times 60^\circ.09$ miles ($\because$ $1' = 6080$ ft).

$\therefore$ $1\text{ Y} = 6.37$ miles ... (6)

[24] Prabhakara, Kedar Nath, *op. cit.*, pp. 133-135.

This is almost in accordance with the relation between a *Yojana* and the British miles as prevalent in those times.[25]

(2) It is evident from the above that the celestial angular distances had been measured into *Yojanas* (or *yojanas*) projected over the surface of earth. *Yojana* is basically a linear measure of length and it is quite confusing with the notion of modern degrees of arc.

(3) *Sūrya Prajñapti* 18, the seventh *Upāṅga* (sub-limb) of Jaina canon of sacred literature, states as .

ता इमीसे रयणप्पभाए पुढवीए बहुसम रमणिज्जातो
भूमिभागाओ* अट्ठजोयणसए अबहाए सूरविमाणं चार चरति।

"From the '*samatala bhūmi*' (earth having plane surface), Sun moves at a height of 800 *Yojanas*"

It is explicitly mentioned in *JP* 10 6 also

We know that[26]

$$1\ Y \quad \frac{500}{8}\ y$$

$$800\ Y \quad 50000\ y \quad OJ$$

Thus on Summer solstice day when Sun lies overhead of an observer situated at O, the point J lies on the circumference of *samatala bhūmi* Since Sun always remains at a distance of 800 Y from *samtala bhūmi*, when the Sun moves on ecliptic, J correspondingly describes an imaginary locus as such that OJ remains always equal to 800 Y. This imaginary locus corresponds to the periphery of *samatala bhumi* and its plane is parallel to the plane of ecliptic (apparent annual path of Sun).

Now using eq No (3) and eq No (4), we have

OJ = 800 Y   73°.7 .. (7)

Celestial latitude of the point J = OJ = 73°.7

So *samatala bhumi* represents the plane parallel to the plane of ecliptic and bounded by the parallel of celestial latitude of 73°.7 The centre of *samatala bhūmi* is coincident with the projection (on earth) of pole of ecliptic. Radius of *samatala bhūmi* is equal to 90° minus 73°.7 i e 16°.3. Obviously, with this concept of *samatala bhūmi*, the Jaina notion that moon is 80 Y higher than Sun becomes easily discernible.

[25] See f.n No 22

[26] *Ibid*

* The word '*bahusama ramaniajjato bhumibhagao*' denotes a standard reference plane and it has been termed as '*samatala bhumi*' simply for convenience sake.

This implies a notion of celestial latitude of Moon.[27] Besides it may be noted that radius of Meru is equal to the height of Moon over that of Sun above *samatala bhūmi* (denoting circular area with centre at the projection of pole of ecliptic), because height of Moon above Sun is

$$80 \text{ Y} = 5000 \text{ y} \qquad \left(\because 1 \text{ Y} = \frac{500}{8} \text{ y} \right)$$

$$= \text{radius of Meru's base on flat earth} \qquad . \quad (8)$$

Therefore when Moon is at maximum northern latitude, its distance from the periphery of *samatala bhūmi* will be 800 less 80 Yojanas. This is Sun's distance from earth's true axis on Summer solstice day. Thus Sun's distance from earth's true axis on Summer solstice day is equal to Moon's distance (when Moon occupies maximum northern latitude) from Meru's tentative axis which lies on the periphery of *samatala bhūmi* Thus it is quite probable that the notion of latitude of Moon, albeit inadequately, might have led towards the choice of radius of Meru.

Incidentally, it is worth noticing that the inclination of Kutubminar is almost equal to the inclination of lunar orbit to ecliptic Probably the place of Kutubminar was therefore particularly chosen for linking the notion of maximum latitude of Moon with its inclination. The link of dimensions of Kutubminar with those of the Jaina model of Meru (see Fig. No. 2-a) lends further support to our view that the radius of Meru on flat earth might have been taken as equal to maximum latitude of Moon (height of Moon above Sun). It is worth noticing that the inclination of Kutubminar incorporates an almost correct value of maximum latitude of Moon, so the construction of Kutubminar may be antiquated to a period when correct value of maximum latitude of Moon became known. This may be a period of the advent of *Siddhāntic* astronomy or the fag end of Jaina astronomy As several Jaina texts have become extinct by this time, so some more investigations are yet to be made in order to ascertain the antiquity of Kutubminar.

In our conclusory opinion, it may be remarked that the only characteristics for *samatala bhūmi* as referred in the text is that Sun remains above it always at a height ('celestial colatitudinal distance' as implied in Jaina texts) of 800 *Yojanas*. However the consistency of figures 800 Y and 510 Y supports our views Even in case of Meru, consistency of figures throughout gives a good criterion. It is also worth mentioning

[27] Lishk, S S and Sharma, S D (1975) 'Latitude of the Moon as determined in Jaina Astronomy', *Sramana*, Vol. 27. No 2, pp. 28-35.

that although the apparent geometry confirms their notion about the shape of earth, yet the actual observation and determinations do fit the real factual geometry of earth. Language of original texts of Jaina canon[28] is very dubious and confusing ; however our results forming a consistent picture[29] prove our acts.

Thanks are due to Professor L. C. Jain for some valuable suggestions in preparation of this paper

[28] The present recension of Jaina canon of sacred literature is generally ascribed to the council of Valabhi under the presidency of Devardhi Ganin which met in 5th or 6th century A.D. For more details, see our paper 'Sources of Jaina Astronomy', *The Jaina Antiquary*, Vol. 29 No. 1 pp 19-32.

[29] For more details, see our paper 'Role of Pre-Aryabhatta Jaina School of Astronomy in the Development of *Siddhantic* Astronomy'. Paper presented at 'Celebration of the 1500th Birth Anniversary of Aryabhatta' I, *INSA*, New Delhi (Nov 2-4. 1977). To be published in *Indian Journal of History of Science*. See also Lishk, S S (1977) 'Mathematical Analysis of Post-*Vedanga* Pre-*Siddhantic* Data in Jaina Astronomy' Ph D thesis, Panjabi University, Patiala

Kunda Kundacarya

—Some Problems regarding His Identity, Name and Birthplace—

HAMPA NAGARAJAIAH

More remote a person, more scope for confusion ; greater the personality, wider the myth and miracles. Kunda Kundacarya (KKA) is both remote and great. He stands unique in the history of Jainism in general, and in the geneology of Digambara Jaina Acaryas in particular. His contribution to Jainology is outstanding. His Prakrit *Pāhudas* have guided a vast number of people both lay and clerical for nearly two thousand years. He is rightly regarded next to Bhagavan Mahavira and his first disciple Ganadhara Gautama The *maṅgala śloka* in which his name appears runs as follows :

maṅgalam bhagavān vīro maṅgalam gautama gani
maṅgalam kunda kundādyah jainadharmo'stu maṅgalam

As in *Purāṇas* so in history, almost every king tries to trace his geneology either from Sun or Moon or even God Himself. In like manner almost every later Acarya has tried to trace his origin from KK *anvaya.* This proves the greatness of KKA in the domain of Jaina Monkhood.

All this is true but more true is the fact that a student of KKA has to face many problems regarding his identity, name, birthplace, etc. It is not that there are no evidences but these are so shrouded by myths and miracles that it has become almost difficult to glean out the truth. This paper, however, will not try to solve them but to review, analyse and assess them as they are and also to show how one has to face peculiar difficulties in evaluating the cultural contribution of KKA.

Let us take up the problem of his identity first, as he and Umasvati are regarded as the same person. On the basis of some inscriptions found at Sravana Belgola, it may appear so. But the problem is not so simple, as these inscriptions are of later period. Scholars like late Dr. Hiralal Jain and Dr. A. N. Upadhye have definitely ruled out the possibility of this identity. Then, what is responsible for this misconception? Perhaps this is because KKA has been attributed with some other traditional names like Padmanandi, Vakragriva, Elacarya, Grddhapiccha and Mahamati.[1] Of these Padmanandi appears to be the genuine name of

[1] Dr. A. N. Upadhye, *Pravacanasara*, Introduction.

KKA. Elacarya, Vakragriva, and Grddhapinccha are names of other Acaryas. Umasvati is sometimes called Graddhapinccha. And probably for this reason the confusion started. And once the confusion starts, somehow it acquires sufficient strength to sustain it

KKA has not given any account of his life It is only in one of the mss of *Barasā Anuvekkhā* it is mentioned that the author is a disciple of Srutakevali Bhadrabahu. If this is accepted as authentic, he would appear to belong to 4th or 3rd century B.C But the linguistic analysis of his writings do not permit us to agree on this The structure of his language such as the loss of voiceless sounds make historical linguists to fix his date around 2nd century A D

In the accepted and almost well-preserved hierarchy of Acaryas after Mahavira upto the beginning of the Christian era also. KKA's name is not found Therefore we cannot rely very much on the oral tradition alone An approach is to be made on critico-historical and linguistic methods. And this approach does not permit us to fix his date before 1st century A.D Any way, identification of some of the Jaina Acaryas and their date may help us in finding out the truth

In the introduction to *Tirukkural*, Prof A. Chakravarthy has said that the author of that immortal poetry is none but KKA and his desciple Tiruvallavar. Prof Chakravarthy is of opinion that KKA lived in the 1st century B. C. As already stated this date cannot be accepted About the authorship his thesis may be considered There is much truth in the statement that KKA hails from the South And it is also true that because of the socio-religious activities sponsored by him and his Mula Sangha early advent of Jainism in Tamilnadu and in other parts of the South was possible It appears that he founded Mula Sangha as early as the 2nd century A.D. This was subsequently revived at Madura by Vajranandi in the fifth century A D under the new name Dravida Sangha Hence 5th century may be considered as the last limit for the age of KKA.

Though it can be safely said that KKA is from the South but here again there is difficulty in locating his exact birth place Prof. A. Chakravarthy is of the opinion that KKA (Elacarya) must have spent his last days in meditation on the top of the hill near Wandiwash in North Arcot District, and his footprints are found on this hill which is being worshipped by pilgrims even today. But the validity of this observation is not beyond doubt. Prof. Chakravarthy observes this on the assumption that KKA and Elacarya are the same person

A similar story is current in Karnataka. There is a hill near Tirthahalli of Shivamogga District and it is called as Kundadri. According to local tradition this hill was named after KKA. There is a legend that this Acarya stayed here for sometime and has left his footprints here after performing austerities. Apart from this there is an inscription which states that KKA performed austerities here. Besides this inscription, there is another by the side of the Parsvanatha Temple on the hill in which the letters are not clear but it is said that it bears the name of KKA.

With regard to this Kundadri hill there is a story which agrees with similar stories about the life of KKA. The story is : Once upon a time in a Jaina village near this Kundadri hill there lived a cow-herd boy. When a Jaina monk visited this place he presented him a palmleaf manuscript which he found on the hill After his death he was reborn there and for the meritorious act of the previous life became wise and a seer. Subsequently he relinquished everything, climbed on the top of the hill and meditated He was no other than our KKA.

This also is not convincing. In the first place footprints of Jaina monks can be found at a number of places. When the exact identity is not known, it is the usual practice to associate it with the name of some great personality. That may be the case here. So the oral tradition regarding his austerities on the hill cannot be accepted at its face value. Thirdly, the inscription is of later period, and the information it contains is also based perhaps on local tradition. As for the story, it can be brushed aside as such stories were composed only to show the fruits and merits of *śāstra dāna*.

Now regarding the name of the hill Kundadri. Here again I differ, though it sounds like the name of KKA. But to my mind, Kundadri has nothing to do with KK, except for the fact that there is a Jaina temple on the hill. Now, the word Kundadri is a compound word consisting of *kunda*+*adri*. *Kunda* is a Kannada (Dravidian) word and *adri* Sanskrit (Aryan) word meaning the same thing—a hill. It is like Malayagiri repeating the same word. Hence the similarity of KK and Kundadri is mere accidental.

Another suggestion is that KK's birth place was Konakondla of Ananthapur District in Andhra. Some scholars almost have accepted this as true but there are three different ways in which it is pronounced : Kondakunda, Kondakundi and Kondakunde. Here again two words of the same family of languages carrying the same meaning are combined. Konda in Telegu means 'a hill'. Its congener are in Kannada

'Kunda', in Tamil and in Malayalam 'Kunram', Hence this explanation sounds rather reasonable, but how to accept it as the birth place of KK?

Incidentally we may discuss the name of Kunda Kunda. At least there are five forms of it : (There is also another form *Kaunda kunda*)

Konda Konda, Kondu Kunda, Kunda Kunda. Kunda Kunda Kunda Kunda

Now about the meaning of the Sanskrit word *Kunda* and *Kunda*. *Kunda* means a pit as in *yajñakunda* or a drinking pot as in *kundapāvi* But Jainism does not uphold drinking or offering in fire. So I am rather reluctant to accept it though *Kundapura* is the birth place of Bhagavan Mahavira. *Kunda* means a kind of jasmine flower, which also does not fit in. But Konda or Kunda can be convincingly explained in Dravidian language if I say Konda of Telegu and Kunda of Kannada are combined. Both these forms are from proto-Dravidian 'Kunram' meaning a hill Thus KKA means an Acarya or learned Teacher who comes from a hill.

Biographical details about KK are still very vague. KKA has shown divine silence in furnishing his bio-data. Thus in absence of internal data we have to rely on external ones. But these external ones also are not dependable as they contain exaggeration Of contemporary records—there are none. Other documents are of later date and scholars are cautious to accept them. Popular stories are more concerned with miracles and his divine power than the man. Here I give five such incidents to show their worth

a. KKA once saw a magician converting a pot full of water into toddy. Acarya wanted to impress on the people that no importance should be given to such acts turning that toddy into a jasmine flower.
b. Acarya once saw some disbelievers to worship a pot full of water. After the ceremony they used to take that water as fish. KK felt sorry for them and he converted the pot into a jasmine flower.
c. He personally visited Purva Videha to pay homage to Simandhara Svami where he also received enlightenment
d. He used to move in the air four fingers above the ground.
e. Once he disputed with the Svetambaras on Mt. Girnar and forced Brahmi to accept Digambara creed.

These stories can be discounted. As some of these feats are attributed to Umasvati and Pujyapada. Camundaraya (10th centrury A.D.) is one of the earliest of Kannada writers who has mentioned that Pujyapada

had the power to float in the air. There is a reference that KKA paid homage to Simandhara Svami from here and probably this has inspired later writers to fabricate the story of his visiting Purva Videha. But, I for one, believe these stories as mere symbolic. KKA probably have journeyed from South to North and East to visit the holy places. Such journeys in those days were remarkable feat for any man. This might have given rise to the story of his visiting Purva Videha. Being a monk he had to travel on foot and monks usually walk faster than ordinary men. This has given rise to rare gift of walking without touching ground. It might be that by attributing this gift his devotees might have attempted to equate him with a Tirthankara or to explain his detachment to this world. Similarly, there is kunda in his name, meaning jasmine; the stories of converting fish and liquor into jasmine might have thus originated.

Now regarding his contribution to Jainology as a writer. Here also there are problems Exact number of his works are not known. Tradition says that he had written 84 *Pāhudas* or *Prābhṛtas*. There is nothing which can corroborate it It is sometimes suggested that he wrote *Kural* in Tamil, *Tattvārtha Sūtra* in Sanskrit and other works in Prakrit, but his authorship of *Kural* and *Tattvārtha Sūtra* can be set aside, so also the authorship of *Mūlācāra* and *Rayaṇasāra*.

He is supposed to have written a commentary on three sections of *Satkhandāgama*. Dr. A. N. Upadhye, however, rules out any such possibility.". .No such commentary attributed to KK is available today, nor have I been able to find any traces of it in *Dhavalā* and *Jayadhavalā* commentaries " As for other works attributed to him most of them are small works. Of the important works, *Samayasāra*, *Pravacanasāra* and *Pañcāstikāya* are outstanding. Here again Amritacandra Suri and Jaya Sena, two prominent commentators differ in mentioning the number of *gāthās*

In a sense KKA was not an original writer. He was essentially a Sastrajna, and seems to have recorded in Prakrit all that which was in oral tradition He was considered as so well versed in Jaina Siddhanta that some of the later writers have equated their contemporary great Acaryas with KKA. May be, as a result of this that KK acquired different names.

A number of editions of his works are now being published in various languages. It would be useful if an exhaustive bibliography is prepared which will show, not only how much has been done so far but also how much more remains to be done.

There is much scope even now to delineate a comparative and coordinated portrait of the life of KKA, purely based on historical documents. A comprehensive and critical survey of the original sources, mainly epigraphical in different languages and areas, and other elaborate details available in different texts, will definitely help in reconstructing an authentic life-sketch of KKA

References

Chakravarthy, A., (ed) *Tirukkural*, (ed) *Pañcāstikāya.*
Desai, P B, *History of Jainism in South India*
Jain, Dr. Hiralal, *Bhāratīya Sanskṛti-me Jain Dharam-kā Yogdan*
Jain, Jagamandarlal, *Outlines of Jainism*, 1940
Hampa, Nagarajayya, (ed) *Nāgakumāra Satpadī*, 1977, (ed) *Sulva Bharata*, 1976.
Premi, Pt. N., *Jain Sāhitya aur Itihās*
Setty, Raghuchandra T, (ed) *Jñānacandra Carita*, 1958
Sastry, Santaraja A, (ed) *Nāgakumāra Caritam*, 1933
Upadhye, Dr. A. N., (ed) *Pravacanasāra*, 1964
Vasantharaj, M D., *Sanmati Srīvihāra*
Epigraphia Carnatika, vols II, III, etc

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Kunda Kunda's Influence on Some Kanvada Poets

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In the geneology of Digambra Acaryas Kundakundacarya's (KKA) place is unique as he has preserved to his followers the rich traditional knowledge of Jaina canon. It is through his writings that Kannada poets had the glimpse of the literary and cultural heritage of Jainism. This paper attempts to delineate the influence of this great Master on some of the Kannada poets

It was the practice of Jaina Poets in Kannada, to pay homage to Arhatas, Siddhas, Acaryas, Upadhyayas and Sarva Sadhus- the five Paramesthi's in the first five stanzas. After that Sarasvati, *Yakṣa* and *Yakṣi* are respectfully remembered Immediately, after that, there will be the honourable mention of some luminory Jaina Acaryas. This is traced from Gautama Ganadhara, apostle of Mahavira, upto the contemporary teacher of that particular poet. (This pattern has been a model for later Virasaiva poets in Kannada) This pattern became so customary that it was followed even in inscriptions, also

It is in this context that the Jaina poets in Kannada mention KKA. Santinatha (1066), Karnaparya (a 1140), Aggala (a 1189), Nemicandra (a 1170), Gunavarma II (a 1215), *Nāgacandra* (a 1100), Parsvapandita (a.1205) Janna (1209), Kamalabhava (a. 1235), Madhura (a. 1385), Kumudendu (a. 1275), Nagaraja (1331), Balacaidra (a. 1170), Vrttavilasa (a. 1360), Mangaraja (1509) are some of the poets who mention him. Generally, KK and Umasvati are mentioned together. Very few like Nayasena, Madhura and Mangarasa mention KK alone. But, on the other hand, quite a good number of poets record Umasvati only, either by his name or by his another name, Grddhapinccha.

Pampa (941), one of the earliest poets of Kannada neither mentions the name of KK nor the name of Umasvati directly. He simply pays his homage to Grddhapinchha, which is another name of Umasvati. Camundaraya and Acanna have followed Pampa in this in just mentioning Grddhapinccha and omitting KK from the list Ponna (950), Ranna (973), Bandhuvarma (a. 1200) and Sisumayana (a. 15th c) do not mention the name of KK at all

In mentioning the name of KK also there is no uniformity. Some poets mention his name, some mention his works, and some speak of his towering personality. Nagacandra says in his *Mallināthapurāṇa* that "KK is well known in the world as a veteren of Jaina philosophy, had the rare distinction of moving four inches above the ground which he had gained by performing profound penance." (1-15). According to poet Santhinatha, "KK not only had the quality of walking four inches above the earth, but also had the impeccable character. Though, he was dauntless, he had concealed his courage like a hidden sword" (*Sukumāra Caritam*, 1-15)

Poet Bahubali (16th c) mentions him as the author of *Prābhṛtatraya* and his marvellous acts. Payanavarni (*Jñānacandra Carite*, 17th c) and poet Bommanna (*Nāgakumāra Satpadī* 18th c) illustrate KK's miracles. Some Kannada poets like Santhinatha, Nagacandra, Aggla, Janna give the form of Kondakunda. Nemicandra, Nagaraja, Kamalabhava, Madhura and some others quote his name as Kundakunda. Balacandra (commentator) and Parsvapandita record his name as Kundakunda, now accepted as the standard form, where as Bahubali alone gives the form Kundendu. These variant forms evidently go in favour of KKA's popularity.

It is thus evident that KK must have influenced these Kannada poets A comparative study also proves this fact. Kannada language had the contact of Prakrit language at its initial stage as the Jaina poets, who were well versed in Prakrit and incidentally, the early cultivators of this language. In this respect, KKA has paved the way in intensifying the contact of Kannada and Prakrit

Voddārādhane which is one of the early works of Kannada language (10th c), quotes profusely from Sanskrit and Prakrit texts Four of the seven MSS used for editing this text, contain the following two Prakrit *gāthās* at the very beginning, where as the other three MSS start with an invocation of *Ratnakaranda Srāvakācāra's* very first verse (ie., *namah s-i vardhamānāya* .) :

(y)indasaya vandiyānam tihuvanahiya
mahura visada vakkhāṇam
antātitha guṇāṇam namo jiṇāṇam
jida bhavāṇam

(y)esasurāsura manusindavandidam dhoda
ghāyi kamma malam
paṇamāmi vadddamāṇam ticchandayassa
kattāram

Students of KKA know pretty well that these *gāthās* are from his *Pancāstikāya* and *Pravacanasāra* respectively. His works on Jaina ontology, eipstemology and metaphysics are so authentic that any writer who intends to deal on such topics cannot escape his influence Naturally, the author of *Voddārādhane* has come under his magnetic influence. Apart from this, if the authorship of *Mūlācāra* is decided in favour of KK, then his influence on *Voddārādhane* would be immense ; there are about 17 *gāthās* of *Mūlācāra* in *Voddāradhane*.

Bandhuvarma (about 1200) is one of the important poets of Kannada. He has narrated 12 *anuprekṣās* with appropriate stories to illustrate their fruits, in his work '*Jivasambodhane*'. As already pointed out by Dr. A. N. Upadhye in his authentic introduction to *Kārtikeyanuprekṣā* of Svami Kartikeya, KK's influence on this Kannada poet Banduvarma is quite evident Ratnakarvarni (16th c), a famous Kannada poet, is very much influenced by KK's works. In fact, he has borrowed the very idea of *Bhedavijñāna* from him. There are hundreds of poems in *Bharateśa Vaibhava* and *Satakas*, which clearly exhibit KK's influence. Ratnakaravarni is an earnest student of KK. He has expressed in poetic form what KK has narrated in unornamented prosaic style. Ratnakara is also an ardent worshipper of Simandarasvami of Purva Videha, whom he very often remembers affectionately as 'My master Srimandarasvami' (*sīmandarasvāmi nannāyya*).

> *Gāthā* No. 166 of *Pañcāstikāya:*
> *arahantasiddacediya pavayanagananana bhatti sampanno*
> *bandhadi punnam bahuso na hu so kammakkhayam kunadi*

'By devotation to God, one gets *puṇya* in plenty but *karma* remains unwashed'. Ratnakara translates this both in his *Bharateśa Vaibhava* (17-76, 77) and in one of the poems of *Aparājitaśataka* :

> *papavasaneya punyavasaneyinda*
> *lopisi tannolu nindu*
> *a punyavanu toleyadiratma tribhuvana*
> *dipanaganu vratavante*
> *modalestu punyalesihudu suddhatmayo*
> *godolu nindavage lesalla*
> *adarinda punyapapava sariganende*
> *yidu jinavakya nambabale*

This very idea is repeated in the poem *avatapangalum* . ...No. 109 of *Aparājitaśataka*.

Gāthā No. 32 of *Pravacanasāra:*
genhadi neva na muncadi na param
parinamadi kevati bhagavam
pecchadi samantado so janadi savvam
niravasesam

"The Omniscient Lord neither accepts nor abandons nor transforms the external objectivity : he sees all around, and knows everything completely."

Ratnakara has incorporated this in the following poem of *Bharateśa Vaibhava* (*Niranjana Stuti*, 19)

meyyella karnu meyyella manasu ninna
meyyella sukha sakti
meyyella prabheyada mahima nannedyalli
rayya cidambara purusa

"Cidambara Purusa, (Omniscient Lord) you have eyes, mind, the power of joy and light all over the body. Hence, you be seated in my heart"

Gāthā No 412 of *Samayasāra :*

mokkhapahe appanam ethvehi tam ceva
jhavi tam ceva
tattheva vivara niccam ma viharasu
annadavvesu

"In the path of liberation one has to fix, contemplate, experience and continuously associate with the *ātmā*, and abandon the contact of *anya dravya*."

Ratnakara echoes this in the following verse (*Aparājitaśataka* 72)

niścayadindamatmane sudarsanamātmane śuddhabodhamam
taścaritam nijātmane manitrayarūpanumātmanembudam
niścalamagi nambi nijamam tiltdallīye tinamāgi ce
tascirmam negalce śivamendevtā aparājitesvarā

Recently Prof Hampa Nagarajayya has collected for the first time about 250 devotional songs of Ratnakara with the help of eight palmleaf and paper Mss : and this text with critical introduction, variant readings, select glossary and notes is in the press. I learn from the editor that there is KK's influence on some of these songs also.

To sum up, KK's influence on some of the Kannada poets is great. The nature of this influence is of course in details of Jaina metaphysics, ontology, epistemology and mysticism. Here Kannada poets have borrowed his ideas and terminology even. As far as the subject matter of Kannada Jain *Purāṇas* is concerned, their main source was *Mahāpurāṇa* of Jinasena and Gunabhadra and also of course *Vāgārtha Sangraha* or *Triṣaṣṭi Puruṣapurāna* of Kaviparamesthi. It may also be recalled here that there are some Kannada commentaries on KK's three important works—*Samayasāra*, *Pañcāstikāya* and *Pravacanasāra*.

References :

Kamala Hampana : 'Umasvati and Kannada Poets', Paper read at the Conference on Umasvati, Mysore 1977
: (ed) *Cāmuṇḍarāyapurāṇa* (in the Press)
(ed) *Bharatesa Vaibhava*, 1966

Upadhye, Dr. A.N. . (ed) *Pravacanasāra*, II, 1964
(ed) *Kārtikeyānuprekṣā* 1960

Nāgarājayya, Hampa : (ed) *Nāgakumāra Satpadi*, 1977
: (ed) *Salvabharata*, 1976
: (ed) *Songs of Ratnākaravarṇi* (in the Press)

Brahmmappa, G : *Prābhṛtatraya* (with Kannada commentary), 1971

Narasimhachar, Dr D. L. : (ed) *Voddārādhane*, 4th edition, 1970

Chakravarthy, Prof. A : (ed) *Pañcāstikāya*
: (ed) *Tirukkural*

This paper was presented in a Seminar on Kunda Kundacarya organised by the Post-Graduate Department of Prakrit and Jainology of the Mysore University, Mysore (2-5 Oct. 1977).

Evolution of Jaina Sangha

J C. SIKDAR

[*from the previous issue*]

Evolution of Jaina Sanghas through Different Stages :

The period of evolution covered by Jaina Sanghas of the ages of Parsvanatha and Mahavira, the last two Tirthankaras, can be traced on the basis of genuine historical facts. The archaeological and literary records of Jaina Sanghas, ganas, kulas, sakhas, etc [41] in the post-Mahavira period are quite complete but those of anvayas, balis, etc [42] of the Digambaras are regretably fragmentary. Most of the parental Jaina ganas, or gacchas lived either in tropical forests, (e g. Vanavasigaccha) sub forests (*upavana*), gardens (*udyāna*) and temples (*caityas*) in the past.[43]

The earliest monks of Jaina monastic orders were forest-dwellers or garden dwellers, next came the Caityavasin[44] monks (temple-dwellers) and the Vasati-or Upasraya-vasin[45] monks (cloister-dwellers) in later periods. From these early Nirgrantha Sanghas there evolved all types of ganas or gacchas, etc. some of which are in existence to-day. It is known that Kotikagaccha evolved from Nirgrantha gaccha, while Candragaccha evolved from Kotikagaccha, Vanavasin gaccha from Candragaccha, Vatagaceha from Vanavasin gaccha, Tapagaccha[46] from Vatagaccha, Lonkagaccha[47] from Tapagaccha, Sthanakavasin[48] from Lonkagaccha and

[41] See *Kalpasutra Sthaviravali* and *Early Mathura Inscriptions.*

[42] See *Jaina Silalekha Samgraha*, I-IV (Digambara Inscriptions) and *Bhattaraka Sampradaya* for anvayas, balis, etc

[43] It is to be noted that Mahavira passed his ascetic life in forests, sub-forests, gardens and temples (*caityas*) as it is evidenced from the account of itinerary of his religious tour in his ascetic life See *Bhagavati Sutra*, etc.

[44] *Ibid*

[45] It is clearly indicated by the references to the early Mathura Inscriptions, Digambara *Vasatis* and Svetambara *Upasrayas* that the Jaina monks lived in monasteries in later periods See *Early Mathura Inscriptions*, *Jaina Silalekha Samgraha*, I-IV.

[46] See *Pattavali Samuccaya*, Pt I

[47] *Ibid*

[48] See *Pattavali Paraga Samgraha* by Kalyanavijayaji

Terapanthin[49] from Sthanakavasin sect respectively. Vanavasin gaccha[50] appears to have been originated with the Vanavasin monks, which has characteristics intermediate between those of Nirgrantha gaccha, Kotikagaccha and Candragaccha on the one hand and Vatagaccha on the other. The evolution of Vanavasin gaccha is in general characterized by adaptations for forest life[51]. Kotikagaccha lived in the tropics of Northern area of Jaina Sangha[52] as evidenced by early Mathura Inscriptions and the *Kalpasūtra Sthavirāvalī*.

The next sub-order of Nirgrantha gaccha is represented by a single gaccha called Candragaccha[53], i.e. chararaterized by singleness without having any branch. The third sub-order includes all the rest of Nirgrantha gaccha, viz. Vanavasin gaccha, Vatagaccha and Tapagaccha[54]. They have a larger and more complicated monastic organiszation than other previous gacchas. This suborder again is sub-divided into several groups, e.g. Tapagaccha branched off into several sakhas, such as Vijayadeva suri sakha, (A.D. 1675), Vijayaraja Suri sakha (A.D. 1534), Kamala Kalasa sakha (A.D. 1534), Brhat Posala sakha (A.D. 1526), Laghu Posala sakha (A.D. 1526), Sagara gaccha (A.D 1557), Kavala gaccha, etc.[55]

Besides, there are several Jaina monastic orders which represent a group of Jaina Sanghas, isolated in South India during the Acarya period, that underwent an evolution independent of other early Sanghas e.g. Yapaniyasangha, Kasthasangha, Mathurasangha[56], etc The Digambara Jaina Sangha included three groups, viz. (1) Old world Sangha e.g Nirgrantha Mahasramanasangha[57] and Mulasangha[58] with its principal ganas, viz. Devagana, Senagana, Nandigana and Simhagana[59], etc (2) Middle group represented by

[49] *Ibid.*

[50] *Pattavali Samuccaya*, Pt. I, p 48

[51] *Ibid*

[52] See *Early Mathura Inscriptions* for Kotikagana ; *Kalpasutra Sthaviravali* ; *Pattavali Samuccaya*, Pt I, p 45

[53] *Ibid.*, Pt. I, p 48

[54] *Ibid.*, Pt I, pp 48, 53, 57.

[55] See *Tapagaccha Pattavali* ; *Pattavali Samuccaya*, Pt. I, p 57,

[56] Yapaniyasangha—see Darsanasara, 29 (S. 705) , *JSS*, Pt. II, 99, p 73 , Kasthasangha—see Darsanasara, p. 14 ; *JSS*, Pt. III, No. 756, p. 578, p. 66. Mathurasangha—see Darsanasara, p. 17 ; *JSS*. IV, No 265, p 115.

[57] *Jaina Silalekhasamgraha*, Pt. II, No. 98, pp. 69-76 (Nirgrantha Mahasramanasangha).

[58] *JSS*, Pt. II, No. 94, p. 61 (Mulasangha).

[59] See *JSS*, Pt. II, Nos. 111, 113, 114 and 149, 193 for Devagana ; See *Uttarapurana*, Le. 8, ; *JSS*. IV, No. 55, etc. ; *JSS*. Pt. I, Nos. 42, 43, 47, 50, etc. for Nandigana , See the inscription of Siddharavasati for Simhagana.

Yapaniyasangha, Kasthasangha, Dravidasangha[60], etc. and (3) Modern group represented by Taranapanthin Sampradaya[61], Terapanthin Sampradaya[62], Bisapanthin Sampradaya[63], and Tolapanthin Sampradaya[64]. All of these Digambara monastic orders have the same norms and forms of monastic life with some minor variations in asceticism and ecclesiasticism.

The group of old world Jaina Sanghas—Svetambara and Digambaras is large, including various Sanghas, and ganas, etc. of different areas of Jaina mission realm. All these monastic orders tended to assemble at one centre or more. The second group of Jaina Sanghas included ganas, kulas, sakha, gacchas, anvayas, balis, etc. Modern Jaina Sanghas are more like the Sanghas of the mediaeval period than other early Sanghas and ganas, as they evolved out of the mediaeval Sanghas, but they are different enough in monastic characters to be placed in a separate group. The difference between the other groups and modern Jaina Sanghas are rather small in the proportion of parts correlated with one adaptation for a city life rather than a country or rural life.

Almost every organ of Jaina Sangha of the middle age is repeated in modern Jaina Sangha or gaccha. Some of the monastic characters that distinguish modern Jaina monastic orders are : (1) top-heavy ecclesiastical organization[65], (2) the leading part of the monastic order has a prominent linking bridge between the monks and laities—the two eyes of it, (3) modern Jaina monastic orders have got special structural features[66], (4) but the monastic orders of the mediaeval period have a little of them, (5) modern Jaina Sanghas' base is in line with the other Sanghas and sects, etc.[67], (6) the base of modern Jaina Sanghas is adapted for bearing the weight of the entire Jaina Sangha, society being arched length-wise and cross-wise in the whole society, (7) modern Jaina Sanghas

[60] See *Darsanasara* of Jinasena, 26 for Dravidasangha, *JSS*, Pt II, Nos 166, 178, etc

[61] See *Jainism in Rajasthan*, p 92

[62] *Ibid*

[63] *Ibid* p 93

[64] *Ibid*

[65] As it consists of Acarya, Upadhyaya, etc

[66] It is clearly embodied in the constitution of Jaina Sangha defining the executive, Judiciary, and financial features, internal and external relations, monastic jurisprudence, etc

[67] Modern Jaina Sanghas maintain external good relations with the Hindu and Buddhist Sanghas by inviting the Buddhist and other monks to their Assembly and Seminar, for instance, Acarya Tulsi invited two Buddhist monks to participate in Jaina Seminar and Religious Assembly held at Delhi in 1974

are relatively bald-headed as the entire monastic authority is controlled by the Sanghapatis (i.e. Seths)[68] with their financial strength and power That is to say, the position of the Acaryas of modern Jaina Sanghas has declined as a result of monastic capitalism[69], although they are the tutelar crownless heads of the Sanghas, (8) modern Jaina Sangha's judiciary powers for awarding *prāyascitta* (punishment or atonement) to a guilty monk project a little, if at all, beyond the line of the other powers of the Acarya, (9) a modern Jaina Sangha has instruments of power no doubt with errect posture to enforce monastic discipline and regulate the ascetic life, (10) but its legs are longer than the arms to execute monastic discipline in the order because of some handicaps placed by the Sanghapatis and the entire Sangha[70] So it has advantage as well as disadvantage in monastic life for a monk. No Jaina Sangha or gana or gaccha of the mediaeval period resembles modern Jaina Sangha or gana or gaccha respectively in all monastic traits, for instance, Vatagaccha or Tapagaccha has its different monastic organic features more like modern Sanghas than those of any other Sanghas or gacchas, but Lonkagaccha or Sthanakvasin or Terapanthin sect of modern period has its own monastic organic features[71] the most like modern Jaina Sanghas or gacchas Tapagaccha is the only gaccha to have the large number of monastic organs that a modern Jaina Sangha has[72]. It has also high head - Acarya of the order, while other gacchas like Lonka-gaccha, etc most closely resemble modern Jaina Sanghas in their different monastic organic features with respect to any monastic organic structure , the difference between modern Jaina Sanghas and that of the mediaeval period is less than the difference between any of these Sanghas

[68] At present the rich householders—Sanghapatis (Seths) control the main power of the modern Sanghas with the growth of trusteesip, not the Acaryas, the spiritual heads, for the Jaina monks have become too much dependent upon the Seths for their maintenance, that is why they have become a little crownless monks

[69] If one looks into the collection of *Devadravyas* of the Jainas and their investment in banks and industries with interests, it is easily found that the process breeds monastic capitalism ultimately

[70] It is now-a-days the general topic among the common Jaina laities that each big Jaina merchant or industrialist must have one prominent Jaina monk as support of power in the Jaina society and similarly a powerful Jaina monk must have a big capitalist Jaina laity for his name and fame and ecclasiastical power in the monastic order.

[71] An enquiry into the constitution and functions of these mediaeval and modern gacchas clearly reveals the fact of difference in their modes of ascetic life

[72] Tapa-gaccha has thirteen branches, such as, Sundaragaccha. Candasiya-gaccha, Kamalakalasa-gaccha, etc See *Pattavali Samuccaya*, Pt II, p. 256.

Remains of Early Jaina Sanghas:

The earliest Jaina Sanghas are known from archaelogical records at Mathura[73] and Rajasthan[74]. Those Sanghas are believed to have descended from the post-Mahaviran Jaina Sanghas as it is evidenced by the fact that some of these Sanghas recorded in the *Kalpasūtra Sthavirāvalī* and the *Nandisūtra Paṭṭāvalī* and in Mathura Inscriptions are identical, e.g. Kotigaccha or Kotikagana, etc

Since that time Jaina Sanghas have evolved separately and have not given rise to any other forms as no further records are found about them But there emerged new Sanghas, ganas, gacchas, etc., each of which evolved separately from different parent-sanghas during the early mediaeval period or Acarya period[75]. New Jaina Sanghas or gacchas have had a separate evolutionary history since the early period and represented the side branches[76] rather than the segments of the main evolutionary trunk of Jaina Sanghas leading to modern Jaina Sanghas.

The oldest Jaina Sanghas or ganas or kulas or sakhas which have been found recorded in the earliest inscriptions at Mathura in Uttarapradesa were smaller in size than modern Jaina Sanghas or ganas or gacchas and were near the stem of earliest Jaina Sangha of the post-Mahaviran period, leading probably to modern Sanghas in some forms in course of time and they had the same monastic formula of rules[77] These Sanghas probably represented the common ancestor Sanghas, etc. From this point the evolution of modern Sanghas diverged from that of the higher primitive Sanghas During the post-Mahaviran period Jaina monastic orders evolved from their primitive parent-Sanghas and by the middle of that epoch the evolutionary lines leading to the various types of modern Jaina Sanghas, ganas, gacchas, etc. in the Acarya period were distinct, e.g. Tapagaccha[78] probably differentiated from the common-

[73] See *Early Mathura Inscriptions*

[74] See *Tirthankar Mahavir*, Vijayendra Suri, Part II, p 318 '*viraya Bhagavata (ia) tha caturasi tiva (sa) (ka) ye salimalini ra ni vitha majhimi ke.*' This inscription is dated in Vira samvat 84 It is now preserved in Ajmer Museum. It was found at Varli south-east of Ajmer at a distance of 26 miles. It refers to Madhyamika situated at a distance of 8 miles from Chittor in Rajasthan

[75] e.g there evolved Kotikagaccha, Candragaccha, Vanavasigaccha, Vatagaccha and Tapagaccha from Nirgranthagaccha as a result of evolution of it.

[76] e.g Nirgranthagaccha, Kotikagaccha etc leading up to Tapagaccha, Lonka upto Terapanthin evolved in a straight lines from the earliest period.

[77] See *Kalpasutra Sthaviravali*, *Nandisutra Pattavali*, *Early Mathura Inscriptions* and *Pattavali Samuccaya*, Pt I

[78] See *Tapagaccha Pattavali*

ancestor—Nirgrantha Sangha (or gaccha, as it is called) earlier than the others, for the archaeological evidences of the parent-Sanghas of the monastic orders like Kotikagana[79], etc. have been found at Mathura and in South India in archaeological deposits[80].

Jaina Sangha which comes closest to being the common anscestor of the three groups of modern Sangha, viz. Lonkagaccha, Sthanakavasin and Terapanthin on the Svetambara side, is Tapagaccha[81] of Western region of India with monastic characteristic found to-day only in these three groups.

To be continued

[79] See *Early Mathura Inscriptions*

[80] e.g. the existence of Mathura Sangha of the Digambaras in South India suggests its relation with Mathura in North India

[81] See *Tapagaccha Pattavali*, vide *Pattavali Samnccava* pt I *Pattavali Paraga Samgraha* by Muni Kalyanavijayaj

An Obeisance to the Source of Uncreated Light

P. C. DASGUPTA

While accepting the drama is the reflection of our existence distinguished by its variegation, conflicts and value either conditioned by unseen forces or observed by gods, as it was felt in antiquity with the culminating ascent of the ideal of moral virtue, it no doubt creates a sublime atmosphere when the audience can avail a view of the beauty of eternity. The sublimity of a dramatic theme as noted here will recall a Latin hymn attributed to emperor Charlemagne and paraphrased by the seventeenth century English poet John Dryden,

> Creator Spirit, by whose aid
> The World's foundations first were laid,
> Come, visit every pious mind .
> Come, pour thy joys on humankind ,
> From sin and sorrow set us free,
> And make Thy temples worthy of Thee
> O Source of Uncreated Light, etc

Such a prayer was echoed in the beginning of a drama on the birth of the twentyfourth Tirthankara Mahavira staged in the hall of Ahimsa Prachar Samiti, Calcutta, on April 2, 1977 Written by Sri Ganesh Lalwani the drama appeared as a gem of an operatte The play opened with a dance accompanied by a song which touchingly prays for the appearance of the Tirthankara in the World eagerly awaiting his presence The hymn echoed like the voice of the earth, the soul of mankind for dispelling the darkness or mist of illusion and for rescuing existence from suffering,

> 'Come, Come O Tirthankara,
> Dispel darkness and put an end to our sorrow.'

In the next scene queen Trisala explained by dance before king Siddhartha, her husband, the auspicious dreams she saw. These were, a white elephant, a white bull, a lion, the goddess Sri, a garland of flowers, a lake with lotuses, the full moon, the sun, a banner, a vase, the ocean of Milk, the heavenly palace, jewels and a fire without smoke. In the sequence Trisala presented the symbolic aspects of the dreams as described by the *Kalpasūtra*.

In the third scene an old astrologer travels a long way to arrive before Siddhartha and interpretes the dreams. He predicts that an Emperor or a Tirthankara will be born as the son of the royal parents. Anticipating the arrival of the glorious one the king and his companions all complemented and honoured the queen with spontaneous joy.

The fourth and the fifth scenes describe the nativity of Mahavira. Indra, the king of gods takes the holy child in his arms and bathes him on the crest of Mount Meru. All the gods and maids of heaven attend the divine lustration of Mahavira who will dispel the mirage of rebirth emancipating life from the bondage of death. The event was felicitated by a ballet of gods. All sung the victory of Mahavira who will lead mankind to the promised realm of eternity. King Siddhartha on the mortal plane rewards the maid who gave him the news of the birth of the Tirthankara by a necklace of pearls and frees all prisoners from their chains The song wafts in the heaven,

'Victory to Thine O Mahavira !'

The above drama was staged by the young girl students of Jain Sikshalaya, Calcutta. The dances performed by Sm. Anju Arora as queen Trisala were absorbing while the role of Sm. Sangita Bothra as king Siddhartha and that of Sm. Chandrika Maru as the astrologer appeared no less fascinating. The parts played by Sm. Anjana Sancheti, Sm. Kiran Kedia, Sm. Asha Bhatia, Sm. Sudha Daga, and Sm. Niru Arora enlivened the drama in its own sequence. The performance of Sm. Sudha Daga as the rewarded maid of the palace brought about a moment of rare artistry. The role of Sm. Sadhana Lunia as Devaraja Indra and the parts played by Sm. Sudha Bagri, Sm. Rekha Gupta and Sm. Prem Bacchawat as divinities added to the charm of the stage version of the drama composed by Sri Lalwani.

The repertoire of dances directed by Sri Somit Chatterji occupied the main length of the drama. This was distinguished by a filigree of style and sensitivity as also a graceful zest at times. The accompanying orchestra conducted by Sri Rabi Biswas echoed the melody of the narrative as an ennobling offering to the theme. The vocal music was tuned by Sri Baijnath Sharma. The commentary was presented by Sri Rajendra Sharma. A pleasant lighting effect was brought about by Sri Anil Saha. For the successful performance of the drama due credit may be given to Sm. Rajkumari Begani.

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*"He, who himself hurts the creatures,
or gets them hurt by others,
or approves of hurt done by others,
augments the world's hostility towards himself."*

—LORD MAHAVIRA

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